NOVEMBER/DECEMBER 2024

23UEMB22 — BIOINSTRUMENTATION (ELECTIVE)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Relative Centrifugal force.
2. Applications of Clinical Centrifuge.
3. Beer-Lambert law and its limitation.
4. Advantages and Disadvantages of IR spectroscopy.
5. HPLC.
6. Electrophoresis.
7. EMG.
8. Applications of Computerized Tomography.
9. Autoradiography.
10. Radioisotopes.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Discuss in detail on the principle and applications of Autoclave.

Or

(b) What is the difference between Molarity and Molality?

12. (a) Discuss briefly about the principle of Calorimetry with its light pathway.

Or

(b) Describe the working principle of UV-Spectrophotometer and its applications.

13. (a) Write a short note on Thin layer Chromatography.

Or

(b) Discuss the working principle of Polyacrylmide gel Electrophoresis.

14. (a) Describe the principle and applications of ECG.

Or

(b) Discuss the working principle of PET/CT scan instrument in diagnosis of diseases.

15. (a) Briefly describe the measurement of Radioactivity in different samples.

Or

(b) Write the operational protocol of scintillation counter and its applications.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss in detail about the principle and application of laminar air flow chamber.

17. Write an essay on the principle and uses of mass spectroscopy in the field of biological science.

18. Write a detailed account on high pressure liquid chromatography and its applications.

19. Discuss in detail about principle, instrumentation and applications of MRI in medical field.

20. Describe in detailed on Spectrofluorometers in the analysis of biological samples and its applications.

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